CLAIMS

What is claimed is:

1. A satellite life extension spacecraft, comprising:

a mechanical implement adapted for connection to a parent spacecraft;

a thruster pod extension device;

a first thruster pod and a second thruster pod attached to the thruster pod extension device, the first pod positioned relative to the second pod such that a center of mass of a combined spacecraft comprising the satellite life extension spacecraft and the parent spacecraft can be determined relative to the first and second pod.

2. The spacecraft of claim 1, wherein the first and second thruster pods comprise a thruster pivotally affixed to the thruster pod and adapted for rotation about a rotational axis.

3. The spacecraft of claim 2, further comprising logic configured to dynamically calculate the center of mass of the parent/child spacecraft when the mechanical implement is coupled to the satellite.

4. The spacecraft of claim 3, wherein the logic is further configured to calculate a first angle of rotation about the rotational axis corresponding to the center of mass calculated.

5. The spacecraft of claim 4, wherein the logic is further configured to detect a change in the center of mass and calculate a second angle of rotation about the rotational axis corresponding to the change in the center of mass.

6. The spacecraft of claim 1, wherein the thruster pod comprises at least one second thruster, the second thruster rigidly affixed to the thruster pod.

7. A satellite positioning method, the method comprising the steps of:

calculating a center of mass of a parent/child spacecraft;

calculating an angle of rotation of a thruster pod about a gimbal related to the center of mass calculated; and

changing the angle or rotation of the thruster to reflect a change in the center of mass.

8. The method of claim 8, further comprising the steps of:

calculating a first firing direction and a first magnitude of force for a fixed thruster; and

calculating a second firing direction and a second magnitude of force for a gimbaled thruster.

9. The method of claim 8, wherein calculating the first firing direction and calculating the second firing direction are based upon the center of gravity calculated.